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EXAMINER	
KHOO, FOONG LIN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/964,825	Applicant(s) TEZUKA ET AL.
	Examiner F. Lin Khoo	Art Unit 2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 27 September 2001.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-17 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 09/27/2001.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Fitzgerald (U.S. Patent No. 6,421,720).

Regarding Claim 1, Fitzgerald discloses a gateway apparatus (Fig. 1, element 18) which interconnects a first network (Fig. 2, element 20 (transmitting packet gateway) and a second network (Fig. 3, element 28 (receiving packet gateway) comprising:
an encoding processing unit receiving voice data from the first network and generating encoded voice data from the received voice data (Fig. 2, element 22; col 2, line 66 to col 3, line 3); a packet processing unit creating packets of the encoded voice data from the encoding processing unit and transmitting the packets to the second network (Fig. 2, elements 24 and 26; col 3, lines 3 – 11); a network-state estimation unit determining network-state information of the second network (Fig. 2, element 25 together with Fig. 5, element 50; col 3, lines 6 – 9, lines 54 – 62; col 4, lines 57 – 59. The delay signal

element 25 is used in step 50 to monitor the packet network state information of the second network which is equivalent to a network-state estimation unit determining network-state information of the second network); and a determination unit controlling at least one of the encoding of the encoding processing unit and the packetizing of the packet processing unit based on the network-state information determined by the network-state estimation unit (Fig. 5, step 52; col 4 lines 60 – 65. Step 52 is performed within the packetizer (element 24) where it determines the packet size using a reference table with different codec bit rates (see Fig. 6, col 5, lines 13 – 17) when a congestion (or delay) occur in the network. Step 52 is equivalent to a determination unit controlling at least one of the encoding of the encoding processing unit and the packetizing of the packet processing unit based on the network-state information determined by the network-state estimation unit).

Regarding Claim 2, Fitzgerald discloses wherein the determination unit determines a type of the encoding that is performed by the encoding processing unit, based on the network-state information of the second network (Fig. 5, step 52; col 4 lines 60 – 65. Step 52 is performed within the packetizer (element 24) where it determines the packet size using a reference table with different codec bit rates (see Fig. 6, col 5, lines 13 – 17) when a congestion (or delay) occur in the network. Step 52 is equivalent to determining a type of the encoding that is performed by the encoding processing unit, based on the network-state information of the second network).

Regarding Claim 17, Fitzgerald discloses a data transmission method which is performed by a gateway apparatus (Fig. 1, element 18) including an encoding processing unit (Fig. 2, element 22) and a packet processing unit (Fig. 2, element 24) and interconnecting a first network (Fig. 2, element 20 (transmitting packet gateway)) and a second network (Fig. 3, element 28 (receiving packet gateway)), the data transmission method comprising the steps of:

causing the encoding processing unit to receive voice data from the first network and generate encoded voice data from the received voice data (Fig. 2, element 22; col 2, line 66 to col 3, line 3); causing the packet processing unit to create packets of the encoded voice data and transmit the packets to the second network (Fig. 2, elements 24 and 26; col 3, lines 3 – 11); determining network-state information of the second network (Fig. 2, element 25 together with Fig. 5, element 50; col 3, lines 6 – 9, lines 54 – 62; col 4, lines 57 – 59. The delay signal element 25 is used in step 50 to monitor the packet network state information of the second network which is equivalent to a network-state estimation unit determining network-state information of the second network); and controlling at least one of the encoding of the encoding processing unit and the packetizing of the packet processing unit based on the network-state information obtained in the generating step (Fig. 5, step 52; col 4 lines 60 – 65. Step 52 is performed within the packetizer (element 24) where it determines the packet size using a reference table with different codec bit rates (see Fig. 6, col 5, lines 13 – 17) when a congestion (or delay) occur in the network. Step 52 is equivalent to a determination unit controlling at least one of the encoding of the encoding processing

unit and the packetizing of the packet processing unit based on the network-state information determined by the network-state estimation unit).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (U.S. Patent No. 6,421,720) in view of Whitcher et al. (U.S. Patent No. 6,754,221).

Regarding Claim 3, Fitzgerald discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald does not disclose wherein the determination unit determines an option of non-voiced data compression or non-compression that is performed by the encoding processing unit, based on the network-state information of the second network. Whitcher et al. in the same field of endeavor discloses a determination unit which determines an option of non-voiced data compression or non-compression that is performed by the encoding processing unit, based on the network-state information of the second network (Fig. 2, element 108; col

11, lines 1 – 7; col 11, lines 21-24; Fig. 7B step 424; col 18, lines 19 – 36. Step 424 determines whether the available bandwidth can support the telecommunication information compressed according to the selected algorithm and the compression module 108 performs the compression and de-compression based on the selected algorithm. Step 424 is equivalent to the determination unit which determines an option of non-voiced data compression or non-compression that is performed by the encoding processing unit, based on the network-state information of the second network). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the compression and de-compression determination feature as taught by Whitcher et al. into the determination unit of Fitzgerald such that by selecting a compression algorithm based on an available bandwidth, the gateway can take into account static and dynamic factors, as well as the utilization of bandwidth by the customer premises equipment, to provide a higher level of service to users (col 2, lines 11-16).

5. Claims 4, 5, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (U.S. Patent No. 6,421,720) in view of Rochberger et al. (U.S. Patent No. 6,760,309).

Regarding Claim 4, Fitzgerald discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald does not disclose wherein the determination unit determines a packet discarding priority level of the packet processing

unit, based on the network-state information of the second network. Rochberger et al. in the same field of endeavor discloses a determination unit which determines a packet discarding priority level of the packet processing unit, based on the network-state information of the second network (Fig. 8, steps 156 and 158; col 14, lines 40 – 50. The TTL (time to live) information represents how `young` or `old` the packet is and conveys the time left before the packet is no longer of any use. See Fig. 5 . Packets are classified into one of four classes 122 represented by priorities P1 through P4 with P1 having the highest priority and P4 the lowest. Packets that arrive with TTL field values smaller than T.sub.1 are discarded since they are stale to an extent that they cannot be used at the destination. Steps 156 and 158 determine the priority based on the TTL field and discards the packet based on the priority level (TTL < threshold). Steps 156 and 158 are associated with the determination unit determining a packet discarding priority level of the packet processing unit, based on the network-state information of the second network). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the discarding of packets based on a priority in accordance with their degree of freshness or staleness as taught by Rochberger et al. into the determination unit of Fitzgerald whereby the priority is dynamically assigned based on the level of congestion experienced by the individual packet along the path (col 7, lines 18-20).

Regarding Claim 5, Fitzgerald discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald does not disclose wherein the

determination unit determines a packet transmission priority level of the packet processing unit, based on the network-state information of the second network. Rochberger et al. in the same field of endeavor discloses a determination unit which determines a packet transmission priority level of the packet processing unit, based on the network-state information of the second network (Fig. 6, elements 106 and 108; Fig. 8, steps 156 and 158; col 12, lines 29 – 60; col 13, lines 11 – 45. Delay sensitive and non-delay sensitive queues are assigned priorities (class #4 assigned to priority level P4, class#3 assigned to priority P3 and so forth) based on the TTL value in the RTCP message receive in the first network and the packet are transmitted according to the transmission priority. Steps 156 and 158 are associated with the determination unit determining a packet transmission priority level of the packet processing unit, based on the network-state information of the second network). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the time sensitive packets for transmission based on a priority using the TTL value as taught by Rochberger et al. into the determination unit of Fitzgerald whereby the priority is dynamically assigned based on the level of congestion experienced by the individual packet along the path (col 7, lines 18-20).

Regarding Claim 10, Fitzgerald discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald does not disclose wherein the network-state estimation unit reads a TTL value from a packet that is received from a second gateway apparatus via the second network at a start of communication, the

network-state estimation unit sending the TTL value to the determination unit. Rochberger et al. in the same field of endeavor discloses wherein the network-state estimation unit reads a TTL value from a packet that is received from a second gateway apparatus via the second network at a start of communication, the network-state estimation unit sending the TTL value to the determination unit (Fig. 8, steps 156 and 158; col 14, lines 33 – 46. The TTL field conveys the time left before the packet is no longer of any use. Each network entity that receives the packet with a TTL field, subtracts from it the time the packet spent in that entity. Thus, the TTL field decreases as it hops from network entity to entity in the network. Steps 156 and 158 are associated with the network-state estimation unit reading a TTL value from a packet that is received from a second gateway apparatus via the second network at a start of communication (note: The TTL field is embedded in the packet and hence when a communication start the packet has a initial value in the TTL field), the network-state estimation unit sending the TTL value to the determination unit). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the reading of the TTL value by the estimation unit as taught by Rochberger et al. into the network-state estimation unit of Fitzgerald where the TTL value is sent to the determination unit such that the priority is dynamically assigned based on the level of congestion experienced by the individual packet along the path (col 7, lines 18-20).

6. Claims 6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (U.S. Patent No. 6,421,720) in view of Bordonaro et al. (U.S. Patent No. 6,868,094).

Regarding Claim 6, Fitzgerald discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald does not disclose wherein the network-state estimation unit determines a packet loss ratio based on packets that are received from a second gateway apparatus via the second network, and sends the packet loss ratio to the determination unit. Bordonaro et al. in the same field of endeavor discloses the network-state estimation unit which determines a packet loss ratio based on packets that are received from a second gateway apparatus via the second network and sends the packet loss ratio to the determination unit (Fig. 4 elements 100, 102 and 104; col 3, lines 23 – 33; col 11, lines 28 – 40. By sending a sequence number within at least two successive dedicated probe data packets, the destination of the probe data packets detect out-of-sequence arrivals and thus is able to monitor the performance of the network by measuring data packet loss and the sender receiving echoed probe packets from responder can determine the packet loss as indicated in element 104. Steps 100, 102 and 104 are equivalent to the network-state estimation unit determining a packet loss ratio based on packets that are received from a second gateway apparatus via the second network, and sends the packet loss ratio to the determination unit). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the packet loss estimation unit as

taught by Bordonaro et al. into the network-state estimation unit of Fitzgerald where the packet loss information is sent to the determination unit such that the service provider has a way to measure data packet jitter and loss and the users/clients has a way to monitor data packet jitter and loss to ensure they are getting the level of service the ISP agreed to provide (col 1, lines 26 – 29).

Regarding Claim 8, Fitzgerald discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald does not disclose wherein the network-state estimation unit determines a packet arrival time jitter based on packets that are received from a second gateway apparatus via the second network, and sends the packet arrival time jitter to the determination unit. Bordonaro et al. in the same field of endeavor discloses the network-state estimation unit which determines a packet arrival time jitter based on packets that are received from a second gateway apparatus via the second network, and sends the packet arrival time jitter to the determination unit (Fig. 4 elements 100, 102, 104, 106 and 108; col 3, lines 34 – 43; col 11, lines 28 – 52. By time stamping successive probe data packets, variance in network latencies as between the successive probe data packets may be measured and this variance is use to determine data packet jitter in step 108. Steps 100, 102, 104, 106 and 108 are equivalent to a network-state estimation unit determining a packet arrival time jitter based on packets that are received from a second gateway apparatus via the second network, and sends the packet arrival time jitter to the determination unit). At the time the invention was made it would have been obvious to a person of ordinary skill in the

art to incorporate the packet jitter estimation unit as taught by Bordonaro et al. into the network-state estimation unit of Fitzgerald where the packet jitter information is sent to the determination unit such that the service provider has a way to measure data packet jitter and loss and the users/clients has a way to monitor data packet jitter and loss to ensure they are getting the level of service the ISP agreed to provide (col 1, lines 26 – 29).

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (U.S. Patent No. 6,421,720) in view of Scott et al. (U.S. Patent No. 6,816,464).

Regarding Claim 12, Fitzgerald discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald does not disclose further comprising a network-state storage unit storing the network-state information with respect to each of a plurality of destination stations in the second network, wherein the determination unit stores a reference value of one of a packet loss ratio and a packet arrival time jitter, and, when a call connection between the gateway apparatus and one of the plurality of destination stations is established, the determination unit determines a specific one of a set of predetermined control parameter levels based on the result of comparison of the reference value and the network-state information of said one of the plurality of destination stations read from the network-state storage unit. Scott et al. discloses a network-state storage unit storing the network-state information with respect

to each of a plurality of destination stations in the second network, wherein the determination unit stores a reference value of one of a packet loss ratio and a packet arrival time jitter, and, when a call connection between the gateway apparatus and one of the plurality of destination stations is established, the determination unit determines a specific one of a set of predetermined control parameter levels based on the result of comparison of the reference value and the network-state information of said one of the plurality of destination stations read from the network-state storage unit. (Fig. 3, element 310; col 7, lines 11-13. Database 310 is equivalent to a network-state storage unit storing the network-state information. Col 9, lines 33 – 44, Table 2 shows the measured values of average delay, average jitter and packet loss for one candidate route (equivalent to a destination). Fig. 4, elements 408, 410 and 414; col 7, lines 48 – 60; col 8, lines 39 –31. The scoring information is equivalent to reference value use to compare against the measured values to determine candidate routes (each destination station routing). Col 10, lines 33 – 52; Fig. 7, col 11, lines 26 – 34; A quality of service threshold which refers to a minimum value that a route can have and stored for use by the system. This is equivalent to the determination unit determining a specific one of a set of predetermined control parameter levels (a quality of service threshold) based on the result of comparison of the reference value (scoring information). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the database to store network state information for comparing against scoring information as taught by Scott et al. into the gateway apparatus of Fitzgerald for storing score information related to the candidate route(s) for use in route selection and

a user attempting to place a call where the level of quality is below a determined level. can have the call routed to the nearest gateway with an acceptable level of quality (col 3, lines 55-58; col 5, lines 8-11).

8. Claims 13, 14, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (U.S. Patent No. 6,421,720) in view of Fitzgerald (U.S. Patent No. 6,466, 548). Note: Fitzgerald (U.S. Patent No. 6,421,720) for Claims 13, 14 and 16 is referred to as Fitzgerald-A and Fitzgerald (U.S. Patent No. 6,466, 548) as Fitzgerald-B.

Regarding Claim 13, Fitzgerald-A discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald-A does not disclose wherein the network-state estimation unit transmits test voice data to a second gateway apparatus via the second network, receives test packets from the second gateway apparatus via the second network, and determines the network-state information, including an estimated network delay and an estimated voice data quality level, based on the result of comparison of the test voice data and the test packets. Fitzgerald-B discloses the network-state estimation unit transmits test voice data to a second gateway apparatus via the second network, receives test packets from the second gateway apparatus via the second network, and determines the network-state information, including an estimated network delay and an estimated voice data quality level, based on the result of comparison of the test voice data and the test packets (Fig. 1 and Fig. 5 col 4, lines 16 –21; col 4, lines 59 – 64. Test loads simulate a voice stream during end-to-end loop

back test. Voice packets are sent out from gateway 16 and then looped back by gateway 30 (second network) to gateway 16. The gateway 16 measures the delay and jitter characteristics required for the voice packets to loop through the entire network 12 (col 2, lines 22-25). The measurement of the end-to-end delay and the determination of jitter characteristics (QoS testing, col 3, lines 55-57) are equivalent to determining network-state information including an estimated network delay and an estimated voice data quality level, based on the result of comparison of the test voice data and the test packets). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the network-state estimation unit which transmits test voice data to determine the network-state information, including an estimated network delay and an estimated voice data quality level as taught by Fitzgerald-B into the gateway apparatus of Fitzgerald-A so that the capacity of the network can then be adjusted as necessary according to the measured transmission delay (col 2, lines 36-37).

Regarding Claim 14, Fitzgerald-A discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald-A does not disclose wherein the network-state estimation unit compares a transmission time of the test voice data and a receiving time of the test packets, and calculates an estimated network delay of the second network based on the result of the comparison of the transmission time and the receiving time. Fitzgerald-B discloses wherein the network-state estimation unit compares a transmission time of the test voice data and a receiving time of the test

packets, and calculates an estimated network delay of the second network based on the result of the comparison of the transmission time and the receiving time (Test loads simulate a voice stream during end-to-end loop back test. Voice packets are sent out from gateway 16 and then looped back by gateway 30 (second network) to gateway 16. The gateway 16 measures the network delay and jitter characteristics required for the voice packets to loop through the entire network 12 (col 2, lines 22-25). The loop back test is associated with calculating an estimated network delay of the second network based on the result of the comparison of the transmission time and the receiving time). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the network-state estimation unit which transmits test voice data in loopback to determine the network-state information in order to calculate an estimated network delay as taught by Fitzgerald-B into the gateway apparatus of Fitzgerald-A so that the capacity of the network can then be adjusted as necessary according to the measured transmission delay (col 2, lines 36-37).

Regarding Claim 16, Fitzgerald-A discloses a gateway apparatus that performs encoding estimation and voice packetizing. Fitzgerald-A does not disclose wherein the encoding processing unit receives the test voice data from the network-state estimation unit, and generates pulse-code-modulation encoded voice data from the received test voice data. Fitzgerald-B discloses wherein the encoding processing unit receives the test voice data from the network-state estimation unit, and generates pulse-code-modulation encoded voice data from the received test voice data (col 6, lines 22 – 26

and col 7, lines 6- 9). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the network-state estimation unit which transmits test voice data in loopback to determine the network-state information in order to calculate an estimated network delay as taught by Fitzgerald-B into the gateway apparatus of Fitzgerald-A so that the capacity of the network can then be adjusted as necessary according to the measured transmission delay (col 2, lines 36-37).

9. Claims 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (U.S. Patent No. 6,421,720) in view of Bordonaro et al. (U.S. Patent No. 6,868,094) and further in view of Scott et al. (U.S. Patent No. 6,816,464).

Regarding Claim 7, Fitzgerald and Bordonaro et al. disclose a gateway apparatus that performs encoding estimation, voice packetizing and determination of packet loss and packet jitter. Further, Fitzgerald discloses a set of encoding type levels for encoding which is equivalent to one of the set of predetermined control parameter levels being inclusive of at least one of a set of packet discarding priority levels, a set of packet transmission priority levels, and a set of encoding type levels.

Fitzgerald and Bordonaro et al. does not disclose wherein the determination unit stores at least one reference value of the packet loss ratio, and determines a specific one of a set of predetermined control parameter levels based on the result of comparison of said at least one reference value and the packet loss ratio received from the network-state estimation unit.

Scott et al. discloses wherein the determination unit stores at least one reference value of the packet loss ratio, and determines a specific one of a set of predetermined control parameter levels based on the result of comparison of said at least one reference value and the packet loss ratio received from the network-state estimation unit (Fig. 3, element 310; col 7, lines 11-13. Database 310 is equivalent to a determination unit storing the network-state information. Col 9, lines 33 – 44, Table 2 shows the measured values of average delay, average jitter and packet loss. Fig. 4, elements 408, 410 and 414; col 7, lines 48 – 60; col 8, lines 39 –31. The scoring information is equivalent to reference value use to compare against the measured values to determine candidate routes).

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the storing of the scoring information as a reference as taught by Scott et al. into the system of Fitzgerald and Bordonaro et al. to determine the encoding level for a user attempting to place a call where the level of quality is below a determined level can have the call routed to the nearest gateway with an acceptable level of quality (col 3, lines 55-58; col 5, lines 8-11).

Regarding Claim 9, Fitzgerald and Bordonaro et al. disclose a gateway apparatus that performs encoding estimation, voice packetizing and determination of packet loss and packet jitter. Further, Fitzgerald discloses a set of encoding type levels for encoding which is equivalent to one of the set of predetermined control parameter

levels being inclusive of at least one of a set of packet discarding priority levels, a set of packet transmission priority levels, and a set of encoding type levels.

Fitzgerald and Bordonaro et al. does not disclose wherein the determination unit stores at least one reference value of the packet arrival time jitter, and determines a specific one of a set of predetermined control parameter levels based on the result of comparison of said at least one reference value and the packet loss ratio received from the network-state estimation unit.

Scott et al. discloses wherein the determination unit stores at least one reference value of the packet arrival time jitter, and determines a specific one of a set of predetermined control parameter levels based on the result of comparison of said at least one reference value and the packet loss ratio received from the network-state estimation unit (Fig. 3, element 310; col 7, lines 11-13. Database 310 is equivalent to a determination unit storing the network-state information. Col 9, lines 33 – 44, Table 2 shows the measured values of average delay, average jitter and packet loss. Fig. 4, elements 408, 410 and 414; col 7, lines 48 – 60; col 8, lines 39 –31. The scoring information is equivalent to reference value use to compare against the measured values to determine candidate routes).

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the storing of the scoring information as a reference as taught by Scott et al. into the system of Fitzgerald and Bordonaro et al. to determine the encoding level for a user attempting to place a call where the level of quality is below a

determined level can have the call routed to the nearest gateway with an acceptable level of quality (col 3, lines 55-58; col 5, lines 8-11).

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (U.S. Patent No. 6,421,720) in view of Bordonaro et al. (U.S. Patent No. 6,868,094) and further in view of Rochberger et al. (U.S. Patent No. 6,760,309).

Regarding Claim 11, Fitzgerald and Rochberger et al. disclose a gateway apparatus that performs encoding estimation, voice packetizing and reading of a TTL value from a received packet. Further, Fitzgerald discloses a set of encoding type levels for encoding which is equivalent to one of the set of predetermined control parameter levels being inclusive of at least one of a set of packet discarding priority levels, a set of packet transmission priority levels, and a set of encoding type levels. Scott et al. discloses wherein the determination unit stores at least one reference value of the average delay (equivalent to TTL value), and determines a specific one of a set of predetermined control parameter levels based on the result of comparison of said at least one reference value and the packet loss ratio received from the network-state estimation unit (Fig. 3, element 310; col 7, lines 11-13. Database 310 is equivalent to a determination unit storing the network-state information. Col 9, lines 33 – 44, Table 2 shows the measured values of average delay, average jitter and packet loss. Fig. 4, elements 408, 410 and 414; col 7, lines 48 – 60; col 8, lines 39 –31. The scoring

information is equivalent to reference value use to compare against the measured values to determine candidate routes).

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the storing of the scoring information as a reference as taught by Scott et al. into the system of Fitzgerald and Rochberger et al. to determine the encoding level for a user attempting to place a call where the level of quality is below a determined level can have the call routed to the nearest gateway with an acceptable level of quality (col 3, lines 55-58; col 5, lines 8-11).

11. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fitzgerald (U.S. Patent No. 6,421,720) in view of Fitzgerald (U.S. Patent No. 6,466, 548) and further in view of Bordonaro et al. (U.S. Patent No. 6,868,094). Note: Fitzgerald (U.S. Patent No. 6,421,720) for Claim 15 is referred to as Fitzgerald-A and Fitzgerald (U.S. Patent No. 6,466, 548) as Fitzgerald-B.

Regarding Claim 15, Fitzgerald-A and Fitzgerald-B disclose a gateway apparatus that performs encoding estimation, voice packetizing and loopback testing of network. Fitzgerald-A and Fitzgerald-B does not disclose wherein the network-state estimation unit determines at least one of a packet loss ratio and a packet arrival time jitter of the second network based on the received test packets. Bordonaro et al. discloses wherein the network-state estimation unit determines at least one of a packet loss ratio and a packet arrival time jitter of the second network based on the received test packets (Fig.

4 elements 100, 102, 104, 106 and 108; col 3, lines 23 – 43; col 11, lines 28 – 52). At the time the invention was made it would have been obvious to a person of ordinary skill in the art to incorporate the network-state estimation unit that determine at least one of a packet loss ratio and a packet arrival time jitter of the second network based on the received test packets as taught by Bordonaro et al. into the estimation unit of Fitzgerald-A and Fitzgerald-B such that the service provider has a way to measure data packet jitter and loss and the users/clients has a way to monitor data packet jitter and loss to ensure they are getting the level of service the ISP agreed to provide (col 1, lines 26 – 29).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,888,801 to Hock relates to devices, software and methods for determining a quality of service for a Voice over Internet Protocol (VoIP) connection.

U.S. Patent No. 6,912,216 to Smith et al. relates to a method for estimating end-to-end quality of service (QOS), such as packet loss, delay, and delay jitter, in a packet-switched communications network includes steps for calculating packet loss and packet delay each router output link in a network path and using the packet loss and packet delay calculations for each individual router output link to estimate end-to-end QOS.

U.S. Patent NO. 5,892,754 to Kompella et al. relates to an adaptive flow control where the user application specifies desired ranges of Quality of Service parameters and, when the measured network parameters fall outside of the desired range, the user application modifies the transmission strategy to match the available transmission parameters.

U.S. Patent No. 6,868,080 to Umansky et al. provides a way to fallback to a PSTN call at any time during a VoIP call when Quality of Service in a VoIP network falls below some acceptable level.

U.S Publication No. 2001/0020280 to Bastin relates in general to digital signal transmission, and more particularly to a sub-packet insertion method for packet loss compensation method in voice over IP (VOIP) networks.

The above prior art are cited to further show the state of the art with respect to transmission of voice and audio data over IP networks with regard to end-to-end quality of service, specifically, packet loss, packet delays and packet jitter which are characteristics that can significantly impact voice quality.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to F. Lin Khoo whose telephone number is 571-272-5508. The examiner can normally be reached on flex time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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